

**Appendix J**

**TENTATIVE RESOLUTION NO. R9-2005-0111**

**AND**

**ATTACHMENT A**

**AMENDMENT TO THE WATER QUALITY CONTROL PLAN  
FOR THE SAN DIEGO REGION TO INCORPORATE  
TOTAL MAXIMUM DAILY LOADS FOR  
DISSOLVED COPPER, LEAD AND ZINC  
IN CHOLLAS CREEK, TRIBUTARY  
TO SAN DIEGO BAY,**

**AND TO REVISE THE TOXIC POLLUTANTS SECTION OF  
CHAPTER 3 TO REFERENCE THE  
CALIFORNIA TOXICS RULE**

**San Diego Regional Water Quality Control Board**

# SAN DIEGO REGIONAL WATER QUALITY CONTROL BOARD

## TENTATIVE RESOLUTION NO. R9-2005-0111

### A RESOLUTION ADOPTING AN AMENDMENT TO THE WATER QUALITY CONTROL PLAN FOR THE SAN DIEGO REGION TO INCORPORATE TOTAL MAXIMUM DAILY LOADS FOR DISSOLVED COPPER, LEAD, AND ZINC IN CHOLLAS CREEK, TRIBUTARY TO SAN DIEGO BAY,

### AND TO REVISE THE TOXIC POLLUTANTS SECTION OF CHAPTER 3 TO REFERENCE THE CALIFORNIA TOXICS RULE

WHEREAS, The San Diego Regional Water Quality Control Board (hereinafter, San Diego Water Board), finds that:

1. **BASIN PLAN AMENDMENT:** ~~The proposed amendment of the Water Quality Control Plan for the San Diego Basin—Region 9 (Basin Plan) described in the recitals below was developed in accordance with Water Code section 13240 *et seq.*~~ Total Maximum Daily Loads (TMDLs) and allocations for pollutants that exceed water quality objectives in waterbodies that do not meet water quality standards under the conditions set forth in section 303(d) of the Clean Water Act [33 U.S.C. 1250, *et seq.*, at 1313(d)] (“Water Quality Limited Segments”) should be incorporated into the Regional Water Quality Control Plan for the San Diego Region (Basin Plan) pursuant to Article 3, commencing with section 13240, of Chapter 4 of the Porter-Cologne Water Quality Control Act, as amended, codified in Division 7, commencing with section 13000, of the Water Code.
2. ~~**NECESSITY STANDARD** [Government Code section 11353(b)]:~~ This regulatory action meets the “Necessity” standard of the Administrative Procedures Act, Government Code, section 11353, subdivision (b). ~~Amendment of the Basin Plan to establish and implement a Total Maximum Daily Load (TMDL) for Chollas Creek is necessary because the existing water quality in the lowest 1.2 miles of Chollas Creek (from wherever to the mouth of Chollas Creek in San Diego Bay) does not meet applicable numeric water quality objectives for copper, lead or, zinc, or narrative water quality objectives for toxicity. The federal Clean Water Act (CWA) section 303(d) requires the San Diego Water Board to establishment and mandate implementation of TMDLs under the water quality conditions that exist in Chollas Creek. These TMDLs for copper, lead and zinc are necessary to ensure attainment of applicable water quality objectives and restoration of water quality needed to support the beneficial uses designated for Chollas Creek.~~
2. **CLEAN WATER ACT SECTION 303(d):** The lowest 1.2 miles of Chollas Creek (from the mouth of Chollas Creek at San Diego Bay to 1.2 miles inland) were placed on the List of Water Quality Limited Segments, ~~as required by Clean Water Act section 303(d),~~ in 1996 due to ~~elevated~~ levels of dissolved copper, lead, and zinc (metals) in the water column that

exceeded numeric water quality objectives for copper, lead, and zinc, and narrative water quality objectives for toxicity, as required by Clean Water Act (CWA) section 303(d).

3. **BENEFICIAL USE IMPAIRMENTS:** ~~Chollas Creek has two~~ Two beneficial uses ~~impaired- exist in Chollas Creek that are sensitive to, and subject to impairment by elevated concentrations of dissolved metals in the water column. These sensitive beneficial uses are designated for~~ Warm Freshwater Habitat (WARM) and Wildlife Habitat (WILD) require water quality suitable for the protection of aquatic life and aquatic dependent wildlife as described in the Basin Plan definition of the warm freshwater habitat (WARM) and wildlife habitat (WILD) beneficial uses. The water quality necessary to support the WARM and WILD beneficial uses of Chollas Creek ~~are threatened or is, or may be, unreasonably impaired due to elevated levels of dissolved copper, lead, and zinc, and as reflected by persistent toxicity.~~
4. **NECESSITY STANDARD** [Government Code section 11353(b)]: Amendment of the Basin Plan to establish and implement TMDLs for Chollas Creek is necessary because the existing water quality in the lowest 1.2 miles of Chollas Creek does not meet applicable water quality objectives for copper, lead, zinc, or toxicity. CWA section 303(d) requires the establishment and implementation of TMDLs under the conditions that exist in Chollas Creek. TMDLs for copper, lead and zinc are necessary to ensure attainment of applicable water quality objectives and restoration of water quality needed to support the beneficial uses designated for Chollas Creek.
5. **WATER QUALITY OBJECTIVES:** The United States Environmental Protection Agency (USEPA) has established numeric criteria for toxic pollutants which are applicable water quality objectives for dissolved copper, lead, and zinc in ~~Chollas Creek specify that concentrations should not exceed the water quality criteria set forth in the California Toxics Rule (CTR) for acute and chronic conditions, the inland surface waters, enclosed bays, and estuaries of California through promulgation of the California Toxics Rule (CTR). [40 CFR 131.38]. The CTR water quality criteria for dissolved copper, lead and zinc promulgated by the U.S. Environmental Protection Agency (USEPA), are the legally applicable water quality standards in the State of California for inland surface waters, enclosed bays, and estuaries for all purposes and programs under the CWA. These~~ water quality objectives, are presented below, are applicable to Chollas Creek.

*Water Quality Objectives for dissolved metals in Chollas Creek.*

Metal	Numeric Target for Acute Conditions: Criteria Maximum Concentration	Numeric Target for Chronic Conditions: Criteria Continuous Concentration
Copper	$(1) * (0.96) * \{e^{[0.9422 * \ln(\text{hardness}) - 1.700]}\}$	$(1) * (0.96) * \{e^{[0.8545 * \ln(\text{hardness}) - 1.702]}\}$
Lead	$(1) * \{1.46203 - [0.145712 * \ln(\text{hardness})]\} * \{e^{[1.273 * \ln(\text{hardness}) - 1.460]}\}$	$(1) * \{1.46203 - [0.145712 * \ln(\text{hardness})]\} * \{e^{[1.273 * \ln(\text{hardness}) - 4.705]}\}$
Zinc	$(1) * (0.978) * \{e^{[0.8473 * \ln(\text{hardness}) + 0.884]}\}$	$(1) * (0.986) * \{e^{[0.8473 * \ln(\text{hardness}) + 0.884]}\}$

Hardness is expressed as milligrams per liter.

Calculated concentrations should have two significant figures [40 CFR 131.38(b)(2)].

The natural log and exponential functions are represented as “ln” and “e,” respectively.

In addition, the Basin Plan establishes the following narrative water quality objective for “toxicity” to ensure the protection of the WARM and WILD beneficial uses.

**Toxicity Objective:** *All waters shall be maintained free of toxic substances in concentrations that are toxic to, or that produce detrimental physiological responses in human, plant, animal, or aquatic life. Compliance with this objective will be determined by use of indicator organisms, analyses of species diversity, population density, growth anomalies, bioassays of appropriate duration, or other appropriate methods as specified by the San Diego Water Board.*

*The survival of aquatic life in surface waters subjected to a waste discharge or other controllable water factors, shall not be less than that for the same water body in areas unaffected by the waste discharge or, when necessary, for other control water that is consistent with requirements specified in USEPA, State Water Resources Control Board (State Board) or other protocol authorized by the San Diego Water Board. As a minimum, compliance with this objective as stated in the previous sentence shall be evaluated with a 96-hour acute bioassay.*

*In addition, effluent limits based upon acute bioassays of effluents will be prescribed where appropriate, additional numerical receiving water objectives for specific toxicants will be established as sufficient data become available, and source control of toxic substances will be encouraged.*

- NUMERIC TARGETS:** ~~TMDL~~ Numeric targets in TMDLs interpret and implement numeric and narrative water quality ~~standards objectives(i.e., numeric and narrative water quality objectives and beneficial uses)~~ and are established at levels necessary to achieve water quality standards objectives. ~~The~~ San Diego Water Board ~~has set the~~ Attainment of numeric targets for copper, lead and zinc ~~TMDL Numeric Targets for in Chollas Creek must ensure attainment of~~ both the numeric and narrative water quality objectives ~~equal to the numeric water quality objectives~~ cited in Finding 5. ~~Attainment of the TMDL n~~ Numeric

targets equal to the water quality objectives cited in Finding 5 will result in attainment of water quality objectives and compliance with water quality standards in Chollas Creek.

7. **SOURCES OF DISSOLVED METALS:** ~~An analysis of source contributions reveal~~ Many land uses and activities associated with urbanization to be ~~potential~~ sources of copper, lead, and zinc to Chollas Creek. ~~Modeling efforts point toward f~~ Freeways and commercial/ industrial land uses as the ~~are~~ major contributors. ~~Review of studies from other similar urban areas confirms that a~~ Automobiles can be a significant source of all three metals. ~~Other suspected individual sources of copper, lead and zinc are w~~ Water supply systems, pesticides, industrial metal recyclers and other industrial activities also cause or contribute to levels of copper, lead, and zinc in excess of water quality objectives for Chollas Creek. Metals released to the environment by different land uses and activities are washed off of the land surface by urban runoff and storm flows and conveyed to Chollas Creek through municipal separate storm sewer systems.
8. **WATER QUALITY OBJECTIVE VIOLATIONS:** Concentrations of dissolved copper, lead, and zinc have frequently exceeded ~~applicable numeric water quality objectives water quality criteria~~ contained in the CTR ~~and are thus in violation of the Basin Plan narrative water quality objective for toxicity~~. Furthermore, in a Toxicity Identification Evaluation performed in 1999, Chollas Creek stormwater concentrations of zinc and to a lesser extent copper, were identified as causing or contributing to reduced fertility in the purple sea urchin.
9. **ADVERSE EFFECTS OF COPPER, LEAD, AND ZINC:** Concentrations of copper, lead, and zinc in excess of CTR criteria, ~~are believed to cause~~ entail increased risk of adverse effects in ~~biological species~~ aquatic organisms exposed to them. Copper, lead, and zinc may bioaccumulate within lower organisms, however they do not biomagnify up the food chain. Of these three metals, copper is considered the most potent toxin at environmentally relevant aqueous concentrations.
10. **TOTAL MAXIMUM DAILY LOADS AND ALLOCTIONS:** The assimilative or loading capacity of Chollas Creek for dissolved copper, lead, and zinc is defined as the maximum amount of each pollutant that Chollas Creek can ~~receive~~ assimilate and still attain water quality objectives and needed for the protection of designated beneficial uses. ~~The TMDL is comprised of the sum of all individual Wasteload Allocations (WLAs) for point source discharges, the sum of all Load Allocations (LAs) for nonpoint source discharges, and natural background. The TMDLs are concentration based, therefore, the allocations are not additive.~~ The TMDLs include an explicit 10 percent margin of safety (MOS) that takes into account any uncertainties in the TMDL calculation. The TMDL calculations also account for seasonal variations and critical conditions [40 Code of Federal Regulations (CFR), section 130.2(i)]. The TMDLs for dissolved copper, lead, and zinc are equal to the Waste Load Allocations (WLAs) which are 90 percent of the CTR Criteria Continuous Concentration (CCC) and Criteria Maximum Concentration (CMC) equations. Discharges of dissolved copper, lead, and zinc require significant reductions from current levels to meet the allocations.

~~The load and wasteload allocations are equal to the TMDL. The allowable TMDL concentrations will be determined with hardness values measured at the time of compliance monitoring; thus resulting in a direct measure of any seasonal variations and/or critical condition effects on hardness.~~

**11. WASTELOAD REDUCTIONS:** ~~Concentrations~~ Discharges of dissolved copper, lead, and zinc require significant reductions must be reduced from current concentrations levels to meet the allocations.

Most reductions are required at the lower range of the measured hardness and represent up to a 99 percent reduction. However, the average reduction required is closer to 50 percent and a significant number of previously measured metal concentrations would not require a reduction to meet the proposed Numeric Targets

**PERSONS RESPONSIBLE FOR MEETING WASTELOAD ALLOCATIONS:** ~~Most metal discharges (point and nonpoint) are conveyed to Chollas Creek through the municipal separate storm sewer systems (MS4s) owned and operated by municipalities in the Chollas Creek watershed. that MS4s are regulated under various statewide or San Diego Water Board orders prescribing waste discharge requirements for urban runoff that implement federal NPDES regulations. The cities of San Diego, La Mesa, and Lemon Grove, San Diego County, the San Diego Unified Port District Municipal Dischargers and the California Department of Transportation (CalTrans) are responsible for MS4 discharges that contribute to the current load of copper, lead and zinc in Chollas Creek. meeting the WLAs in their urban runoff prior to discharge to Chollas Creek because they own or operate MS4s that discharge copper, lead, and zinc to Chollas Creek. The US Navy facility, Naval Station San Diego, has MS4s separate storm water collection systems that drain directly to Chollas Creek. The Navy is responsible for meeting the WLAs in its MS4 urban runoff discharges of copper, lead and zinc in runoff at the Naval Station San Diego to Chollas Creek. Persons enrolled in the statewide General waste discharge requirements for Discharges of Storm Water Associated with Industrial Activities WDRs (State Water Board Order No. 99-08-DWQ) is are responsible for meeting WLAs in their regulated discharges of copper, lead and zinc in runoff from their industrial facilities to Chollas Creek. At this time, there are no persons enrolled in the general WDRs for Groundwater Extraction Discharges to San Diego Bay and Tributaries (San Diego Water Board Order No. 2001-90). However, future enrollees who discharge in the Chollas Creek watershed will be responsible for meeting the WLAs in their discharges of copper, lead and zinc in their~~ discharges.

**11. IMPLEMENTATION PLAN:** The necessary actions to implement the TMDL are described in the technical report entitled Total Maximum Daily Loads for Dissolved Copper, Lead and Zinc in Chollas Creek, dated June 16, 2005. These actions will be accomplished by the Regional San Diego Water Board and State Water Resources Control Board (State Water Board) by issuing new WDRs or amending the existing WDRs that regulate MS4 discharges, industrial facility stormwater discharges, construction stormwater discharges and groundwater extraction discharges in the Chollas Creek watershed.

- 12. COMPLIANCE MONITORING:** Water quality monitoring will be necessary to assess progress in achieving WLAs and compliance in Chollas Creek with the water quality objectives for dissolved copper, lead, and zinc.
- 13. COMPLIANCE SCHEDULE:** Implementation of copper, lead and zinc wasteload reductions ~~are required~~ over a 710-year staged compliance schedule period, with. —No no reductions ~~are required~~ for the first three years will provide a reasonable period of time for persons who will be responsible for reducing discharges of copper, lead and zinc in the Chollas Creek watershed to develop and implement pollution prevention or control measures to achieve compliance with the TMDL. The subsequent four year period requires ~~incremental reductions capable of achieving the percentage of allowable exceedances of the WLA in discharges until no exceedances are allowed at the end of the seventh year following approval of the TMDLs by the Office of Administrative Law (OAL).~~
- 14. SCIENTIFIC PEER REVIEW:** The scientific basis of this TMDL has undergone external peer review pursuant to Health and Safety Code section 57004. The San Diego Water Board has considered and responded to all comments submitted by the peer review panel.
- 15. STAKEHOLDER PARTICIPATION:** Interested persons and the public have had reasonable opportunity to participate in review of the proposed amendment to the Basin Plan TMDL. Efforts to solicit public review and comment included five public workshops held between April 1999 and April 2005; a public review and comment period of 45 days preceding the San Diego Water Board public hearing; a two week extension of the comment period after the public hearing; and written responses from the San Diego Water Board to oral and written comments received from the public.
- 16. CEQA REQUIREMENTS:** The San Diego Water Board's Basin Planning amendment process is certified as "functionally equivalent" to the CEQA-process of interdisciplinary environmental review prescribed by the California Environmental Quality Act (CEQA) and is therefore exempt from CEQA's requirements to prepare an EIR, Negative Declaration, or Initial Study. The required environmental documentation (Proposed Basin Plan amendment to establish a TMDL for Chollas Cree, the supporting technical report, and the environmental checklist) has been prepared by the San Diego Water Board satisfy the environmental documentation requirements for Basin Planning activities. A public CEQA scoping meeting was held in March 2003.
- The analysis contained in the TMDL Technical Report, the CEQA checklist, and the responses to comments comply with the requirements of the State Water Board's certified regulatory CEQA process, as set forth in the California Code of Regulations, Title 23, section 3375, *et seq.* Furthermore, the analysis fulfills the San Diego Water Board's obligations attendant with-upon the adoption of regulations "requiring the installation of pollution control equipment, or a performance standard treatment or requirement," as set forth in section 21159 of the Public Resources Code.
- 17. ECONOMIC ANALYSIS:** The San Diego Water Board has considered the costs of the reasonably foreseeable methods of compliance with the wasteload reductions specified in this



TMDL.

**18. DE MINIMUS ENVIRONMENTAL EFFECTS:** This Basin Plan amendment will result in no potential for adverse effect, either individually or cumulatively, on wildlife.

**19. PUBLIC NOTICE:** The San Diego Water Board has notified all known interested persons and the public of its intent to consider adoption of this Basin Plan amendment in accordance with Water Code section 13244.

**20. PUBLIC HEARING:** The San Diego Water Board has considered all comments pertaining to this Basin Plan amendment submitted to the San Diego Water Board in writing, or by oral presentations at the public hearing held on May 11, 2005~~at a public meeting on , held a public hearing and heard and considered all comments pertaining to this Basin Plan amendment. Detailed responses to relevant comments have been incorporated into Appendix M of the Technical Report adopted by this Resolution.~~

**21. REVISION TO BASIN PLAN:** The USEPA promulgated a final rule prescribing water quality criteria for toxic pollutants in inland surface waters, enclosed bays, and estuaries in California in 2001 (The California Toxics Rule or “CTR;” [40 CFR 131.38]). CTR criteria constitute applicable water quality objectives in California. In addition to the CTR, certain criteria for toxic pollutants in the National Toxics Rule [40 CFR 131.36] constitute applicable water quality objectives in California as well. Revision of the section in Chapter 3 of the Basin Plan titled “Toxic Pollutants” needs to be revised to reference the current federal rules. The subsection entitled “Water Quality Objectives for Toxic Pollutants” in Chapter 3 of the Basin Plan needs to be deleted. This subsection is redundant since the CTR and certain NTR criteria constitute applicable water quality objectives in California.

~~**REVISION TO WATER QUALITY OBJECTIVES FOR TOXIC POLLUTANTS:** In 2000 the United States Environmental Protection Agency promulgated a final rule prescribing water quality criteria for toxic pollutants in inland surface waters, enclosed bays and estuaries in California (The California Toxics Rule or “CTR;” 40 CFR 131.38). The CTR superseded existing water quality objectives in Chapter 3 of the Basin Plan needs to be revised to reflect existing federal law. The water quality objectives for toxic pollutants need to incorporate the California Toxics Rule [40 CFR 131.38] numeric criteria of the CTR as water quality objectives for toxic pollutants in inland surface waters, enclosed bays, and estuaries in the San Diego Region.~~



~~In May 2000, the USEPA promulgated numeric water quality criteria for priority toxic pollutants and other water quality standard provisions to be applied to waters in California (California Toxics Rule (CTR); 40 CFR 131.38). The CTR serves as a place holder until the State re-adopts its own numeric criteria for toxics. The CTR established numeric water quality criteria legally applicable in the State of California as WQOs for inland surface waters and enclosed bays and estuaries.~~

~~The CTR does not contain acute and chronic numeric criteria for mercury to protect freshwater and saltwater aquatic life; acute numeric criteria for selenium to protect freshwater aquatic life, nor numeric criteria for chloroform. California remains in the The National Toxics Rule (40 CFR 131.36), promulgated in 1992 for certain waters and pollutants, provides appropriate water quality criteria for mercury, selenium and chloroform.~~

**NOW, THEREFORE, BE IT RESOLVED** that

1. **AMENDMENT ADOPTION:** The San Diego Water Board hereby adopts the amendment to the Basin Plan to incorporate the TMDLs for dissolved copper, lead, and zinc in Chollas Creek and to revise the Basin Plan to reference the California Toxics Rule as set forth in Attachment A hereto.
2. **TECHNICAL REPORT APPROVAL:** The San Diego Water Board hereby approves the Technical Report entitled *Total Maximum Daily Loads for Dissolved Copper, Lead, and Zinc in Chollas Creek, Tributary to San Diego Bay*, dated June 16, 2005 ~~insert date~~.
3. **CERTIFICATE OF FEE EXEMPTION:** The Executive Officer is authorized to sign a Certificate of Fee Exemption.
4. **AGENCY APPROVALS:** The Executive Officer is directed to submit this Basin Plan amendment to the State Water Board for approval in accordance with Water Code section 13245. The San Diego Water Board requests that the State Water Board approve the Basin Plan amendment and forward it to the OAL and the USEPA for approval.
5. **NON-SUBSTANTIVE CORRECTIONS:** If, during the approval process for this amendment, the State Water Board or OAL determines that minor, non-substantive corrections to the language of the amendment are needed for clarity or consistency, the Executive Officer may make such changes, and shall inform the San Diego Water Board of any such changes.

*I, John H. Robertus, Executive Officer, do hereby certify the foregoing is a full, true and correct copy of a Resolution adopted by the California Regional Water Quality Control Board, San Diego Region, on [insert date].*

Tentative Resolution No. R9-2005-0111  
TMDL for Copper, Lead and Zinc in Chollas Creek

~~May 11, 2005~~ June 29, 2005 |

**JOHN H. ROBERTUS**  
EXECUTIVE OFFICER

**ATTACHMENT A  
TO RESOLUTION NO. R9-2005-0111**

**AMENDMENT TO THE WATER QUALITY CONTROL PLAN FOR THE SAN DIEGO  
REGION TO INCORPORATE TOTAL MAXIMUM DAILY LOADS FOR  
DISSOLVED COPPER, LEAD, AND ZINC IN CHOLLAS CREEK,  
TRIBUTARY TO SAN DIEGO BAY,  
  
AND TO REVISE THE TOXIC POLLUTANTS SECTION OF CHAPTER 3 TO  
REFERENCE THE CALIFORNIA TOXICS RULE**

This Basin Plan amendment establishes a Total Maximum Daily Load (TMDL) and associated load and wasteload allocations for copper, lead and zinc in Chollas Creek, and revises the Toxic Pollutants section of Chapter 3 to reference the California Toxics Rule. This amendment includes a program to implement the TMDL and monitor its effectiveness. Chapters 2, 3, and 4 of the Basin Plan are amended as follows:

**Chapter 2, Beneficial Uses**

***Table 2-2. Beneficial Uses of Inland Surface Waters***

Add the following footnote 3 to Chollas Creek

<sup>3</sup>Chollas Creek is designated as an impaired water body for copper, lead and zinc pursuant to Clean Water Act section 303(d). A Total Maximum Daily Load (TMDL) has been adopted to address this impairment. See Chapter 3, Water Quality Objectives for Toxicity and Toxic Pollutants and Chapter 4, Total Maximum Daily Loads.

**Chapter 3, Water Quality Objectives**

***Inland Surface Waters, Enclosed Bays and Estuaries, Coastal Lagoons, and Ground Waters***

**Water Quality Objectives for Toxicity:**

Add a fifth paragraph as follows:

Chollas Creek is designated as a water quality limited segment for dissolved copper, lead, and zinc pursuant to Clean Water Act section 303(d). Total Maximum Daily Loads have been adopted to address these impairments. See Chapters 2, Table 2-2, *Beneficial Uses of Inland Surface Waters*, Footnote 3 and Chapter 4, Total Maximum Daily Loads.

**TOXIC POLLUTANTS:**

Revise as follows:

The USEPA promulgated a final rule prescribing water quality criteria for toxic pollutants in inland surface waters, enclosed bays, and estuaries in California in 2001 (The California Toxics Rule or “CTR;” [40 CFR 131.38]). CTR criteria constitute applicable water quality objectives in California. In addition to the CTR, certain

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criteria for toxic pollutants in the National Toxics Rule [40 CFR 131.36] constitute applicable water quality objectives in California as well.

Chollas Creek is designated as a water quality limited segment for dissolved copper, lead, and zinc pursuant to Clean Water Act section 303(d). Total Maximum Daily Loads have been adopted to address these impairments. See Chapters 2, Table 2-2, *Beneficial Uses of Inland Surface Waters*, Footnote 3 and Chapter 4, Total Maximum Daily Loads.

~~Federal Register, Volume 57, Number 246 amended Title 40, Code of Federal Regulations, Part 131.36 (40 CFR 131.36) and established numeric criteria for a limited number of priority toxic pollutant for inland surface waters and estuaries in California. USEPA promulgated these criteria on December 22, 1992, to bring California into full compliance with section 303(c)(2)(B) of the Clean Water Act. California is not currently in full compliance with this section of the Clean Water Act due to the invalidation of the Water Quality Control Plan for Inland Surface Waters of California and the Water Quality Control Plan for Bays and Estuaries of California. However, the criteria established in 57 FR 60848 (December 22, 1992) (specifically pages 60920-60921) are still applicable to surface waters in the Region.~~

***Water Quality Objectives for Toxic Pollutants:***

~~*Inland surface waters, enclosed bays, and estuaries shall not contain toxic pollutants in excess of the numerical objectives applicable to California specified in 40 CFR 131.36 (§131.36 revised at 57 FR 60848, December 22, 1992).*~~

## **Chapter 4, Implementation**

After the subsection on the TMDL for Dissolved Copper, Shelter Island Yacht Basin, San Diego Bay add the following subsection:

### ***Total Maximum Daily Loads for Copper, Lead, and Zinc in Chollas Creek***

On [insert date], the Regional Board adopted Resolution No. R9-2005-0111, *A Resolution Adopting an Amendment to the Water Quality Control Plan for the San Diego Region to Incorporate Total Maximum Daily Loads for Dissolved Copper, Lead and Zinc in Chollas Creek, Tributary to San Diego Bay*. The TMDL Basin Plan Amendment was subsequently approved by the State Water Resources Control Board on [Insert Date], the Office of Administrative Law on [Insert Date], and the United States Environmental Protection Agency on [Insert Date].

## **Problem Statement**

Dissolved copper, lead and zinc concentrations in Chollas Creek violate numeric water quality objectives for copper, lead, and zinc promulgated in the California Toxics Rule, and the narrative

## TMDL for Dissolved Copper in Shelter Island Yacht Basin

objective for toxicity. Concentrations of these metals in Chollas Creek threaten and impair the designated beneficial uses of warm freshwater habitat (WARM), and wildlife habitat (WILD).

### **Numeric Targets**

The TMDL numeric targets for copper, lead, and zinc are set equal to the numeric water quality objectives as defined in the California Toxics Rule (CTR) and shown below. Because the concentration of a dissolved metal causing a toxic effect varies significantly with hardness, the water quality objectives are expressed in the CTR as hardness based equations. The numeric targets are equal to the loading capacity of these metals in Chollas Creek.

Table 4. *[insert number]* Water Quality Objectives/Numeric Targets for dissolved metals in Chollas Creek.

<b>Metal</b>	<b>Numeric Target for Acute Conditions: Criteria Maximum Concentration</b>	<b>Numeric Target for Chronic Conditions: Criteria Continuous Concentration</b>
Copper	$(1) * (0.96) * \{e^{[0.9422 * \ln(\text{hardness}) - 1.700]}\}$	$(1) * (0.96) * \{e^{[0.8545 * \ln(\text{hardness}) - 1.702]}\}$
Lead	$(1) * \{1.46203 - [0.145712 * \ln(\text{hardness})]\} * \{e^{[1.273 * \ln(\text{hardness}) - 1.460]}\}$	$(1) * \{1.46203 - [0.145712 * \ln(\text{hardness})]\} * \{e^{[1.273 * \ln(\text{hardness}) - 4.705]}\}$
Zinc	$(1) * (0.978) * \{e^{[0.8473 * \ln(\text{hardness}) + 0.884]}\}$	$(1) * (0.986) * \{e^{[0.8473 * \ln(\text{hardness}) + 0.884]}\}$

Hardness is expressed as milligrams per liter.

Calculated concentrations should have two significant figures [40 CFR 131.38(b)(2)].

The natural log and exponential functions are represented as "ln" and "e," respectively.

### **Source Analysis**

The vast majority of metals loading to Chollas Creek are believed to come through the storm water conveyance system. An analysis of source contributions reveals many land uses and activities associated with urbanization to be potential sources of copper, lead and zinc to Chollas Creek. Modeling efforts point toward freeways and commercial/industrial land uses as the major contributors

### **Total Maximum Daily Loads**

The TMDLs for dissolved copper, lead and zinc in Chollas Creek ~~is~~are concentration-based and set equal to 90 percent of the numeric targets/loading capacity.

### **Margin of Safety**

The TMDL includes an explicit margin of safety (MOS). Ten percent of the loading capacity was reserved as an explicit MOS.

### **Allocations and Reductions**

## TMDL for Dissolved Copper in Shelter Island Yacht Basin

The source analysis showed that nonpoint sources and background concentrations of metals are insignificant, and thus, were set equal to zero in the TMDL calculations. The wasteload allocations are set equal to 90 percent of the numeric targets/loading capacity. Concentrations of dissolved copper, lead and zinc require significant reductions from current concentrations to meet the loading capacity.

**TMDL Implementation Plan**

Persons whose point source discharges contribute to exceedance of WQOs for copper, lead, and zinc in Chollas Creek will be required to meet the WLA hardness dependant concentrations in their urban runoff discharges before it is discharged to Chollas Creek. Actions to meet the WLAs in discharges to Chollas Creek will be required in WDRs that regulate MS4 discharges, industrial facility and construction activity stormwater discharges, and groundwater extraction discharges in the Chollas Creek watershed. The following orders ~~will~~ may be ~~amended~~ reissued or revised by the Regional Board to include ~~actions~~ requirements to meet the WLAs. Alternatively, the Regional Board may issue new WDRs to meet the WLAs.

**Order No. 2001-01**, NPDES No. CAS0108758, *Waste Discharge Requirements for Discharges of Urban Runoff from the Municipal Separate Storm Sewer Systems Draining the Watersheds of the County of San Diego, the Incorporated Cities of San Diego County, and the San Diego Unified Port District*, or subsequent superceding NPDES renewal orders.

**Order No. 2000-90**, NPDES No. CAG19001, *General Waste Discharge Requirements for Temporary Groundwater Extraction and Similar Waste Discharges to San Diego Bay and Storm Drains or other Conveyance Systems Tributary Thereto*, or subsequent superceding NPDES renewal orders.

**Order No. 2001-96**, NPDES No. CAG 919002, *General Waste Discharge Requirements for Groundwater Extraction Waste Discharges from Construction, Remediation and Permanent Groundwater Extractioi Projects to Surface Waters within the San Diego Region Except for San Diego Bay* or subsequent superceding NPDES renewal orders.

**Order No. 97-11**, *General Waste Discharge Requirements for Post-Closure Maintenance of Inactive Nonhazardous Waste Landfills within the San Diego Region* or subsequent superceding NPDES renewal orders.

The Regional Board shall request the State Water Resources Control Board to amend the following statewide orders:

**Order No. 99-06-DWQ**, NPDES No. CAS000003, *National Pollutant Discharge Elimination System (NPDES) Permit, Statewide Storm Water Permit, and Waste Discharge Requirements (WDRs) for the State of California, Department of Transportation (Caltrans)*, or subsequent superceding NPDES renewal orders.

## TMDL for Dissolved Copper in Shelter Island Yacht Basin

**Order No. 97-03-DWQ**, NPDES No. CAS 000001, *Waste Discharge Requirements for Discharges of Storm Water Associated with Industrial Activities Excluding Construction Activities*, or subsequent superceding NPDES renewal orders.

**Order No. 2003-0005-DWQ**, NPDES No. CAS000004, *Waste Discharge Requirements for Storm Water Discharges from Small Municipal Separate Storm Sewer Systems*, or subsequent superceding NPDES renewal orders.

**Order No. 99-08-DWQ**, NPDES No. CAS000002, *General Permit for Storm Water Discharges Associated with Construction Activity*, or subsequent superceding NPDES renewal orders.

The Regional Board shall require the U.S. Navy to submit a Report of Waste Discharge to enroll the Naval Base San Diego facility under statewide Order No. 2003-005-DWQ.

### **Implementation Monitoring Plan**

The dischargers will be required to monitor Chollas Creek and provide monitoring reports to the Regional Board for the purpose of assessing the effectiveness of the management practices implemented to meet the TMDL allocations. The San Diego Water Board shall amend the following order to include a requirement that the cities of San Diego, Lemon Grove, and La Mesa, the County of San Diego, the San Diego Unified Port District, and CalTrans investigate excessive levels of metals in Chollas Creek and feasible management strategies to reduce metal loadings in Chollas Creek, and conduct additional monitoring to collect the data necessary to refine the watershed wash-off model to provide a more accurate estimate of the mass loads of copper, lead, and zinc leaving Chollas Creek each year.

**Order No. R9-2004-0277**, *California Department of Transportation and San Diego Municipal Separate Storm Sewer System Copermittees Responsible for the Discharge of Diazinon into the Chollas Creek Watershed, San Diego, California*.

### **Schedule of Compliance**

Concentrations of metals in urban runoff shall only be allowed to exceed the WLAs by a certain percentage for the first ~~five-nine~~ years after adoption of this TMDL. Allowable concentrations shall decrease ~~by 20 percent each year during this time~~ as shown in Table 4. [insert number]. For example, if the measured hardness in year four dictates the WLA for copper in urban runoff is 10 µg/l, the maximum allowable measured copper concentration would be ~~14~~ 18.5 µg/L. By the end of the ~~seventh-ninth~~ year of this TMDL, the WLAs of this TMDL shall be met. This will ensure that copper, lead, and zinc water quality objectives are being met at all locations in the creek during all times of the year.

Table 4. [insert number] Compliance schedule and interim goals for achieving Wasteload Allocations

	<u>Allowable Exceedance of the WLAs</u> <u>(allowable percentage above)</u>		
<u>Compliance Year</u>	<u>Copper</u>	<u>Lead</u>	<u>Zinc</u>



## TMDL for Dissolved Copper in Shelter Island Yacht Basin

<u>(year after OAL approval)</u>			
<u>1-3</u>	<u>100%</u>	<u>100%</u>	<u>100%</u>
<u>4</u>	<u>85%</u>	<u>85%</u>	<u>85%</u>
<u>7</u>	<u>50%</u>	<u>50%</u>	<u>50%</u>
<u>8</u>	<u>25%</u>	<u>25%</u>	<u>25%</u>
<u>9</u>	<u>10%</u>	<u>10%</u>	<u>10%</u>
<u>10</u>	<u>0%</u>	<u>0%</u>	<u>0%</u>

Compliance with the interim goals in this schedule can be assessed by showing that dissolved metals concentrations in the receiving water exceed the WQOs for copper, lead, and zinc by no more than the allowable exceedances for WLAs shown in the table above. Regulated groundwater discharges to Chollas Creek must meet the WLAs at the initiation of the discharge. No schedule to meet interim goals will be allowed in the case of groundwater discharges.

	<b>Allowable Exceedance of the WLAs (allowable percentage above)</b>		
<b>Compliance Year (year after OAL approval)</b>	<b>Copper</b>	<b>Lead</b>	<b>Zinc</b>
<u>1</u>	<u>100%</u>	<u>100%</u>	<u>100%</u>
<u>2</u>	<u>100%</u>	<u>100%</u>	<u>100%</u>
<u>3</u>	<u>100%</u>	<u>100%</u>	<u>100%</u>
<u>4</u>	<u>50%</u>	<u>50%</u>	<u>50%</u>
<u>5</u>	<u>25%</u>	<u>25%</u>	<u>25%</u>
<u>6</u>	<u>10%</u>	<u>10%</u>	<u>10%</u>
<u>7</u>	<u>0%</u>	<u>0%</u>	<u>0%</u>